Release notes for ENDF/B Development n-053_I_135 evaluation

April 26, 2017

- **checkr** Warnings:

  1. A previous error halted parsing of the current section
     MAT=5349, MF= 1, MT=451 (1): Parsing stopped

     ```
     ERROR(S) FOUND IN MAT=5349, MF= 1, MT=451
         SECTION CANNOT BE CHECKED FROM SEQUENCE NUMBER     112 TO     142
     ```

- **checkr** Errors:

  1. A variable is outside the allowed ENDF range
     MAT=5349, MF= 1, MT=451 (0): Variable range

     ```
     ERROR(S) FOUND IN MAT=5349, MF= 1, MT=451
         MOD =    1 OUT OF RANGE    0 -    0          RECORD NUMBER     112
     ```

  2. Missing a section in directory so your directory is messed up. This error will break everything else
     MAT=5349, MF= 2, MT=151 (0): Directory (b)

     ```
     ERROR(S) FOUND IN MAT=5349, MF= 2, MT=151
         SECTION  2/151 NOT IN DIRECTORY             RECORD NUMBER     144
     ```

  3. Missing a section in directory so your directory is messed up. This error will break everything else
     MAT=5349, MF= 3, MT= 1 (0): Directory (b)

     ```
     ERROR(S) FOUND IN MAT=5349, MF= 3, MT=  1
         SECTION  3/  1 NOT IN DIRECTORY             RECORD NUMBER     150
     ```

  4. Missing a section in directory so your directory is messed up. This error will break everything else
     MAT=5349, MF= 3, MT= 2 (0): Directory (b)

     ```
     ERROR(S) FOUND IN MAT=5349, MF= 3, MT=  2
         SECTION  3/  2 NOT IN DIRECTORY             RECORD NUMBER     207
     ```

  5. Missing a section in directory so your directory is messed up. This error will break everything else
     MAT=5349, MF= 3, MT= 4 (0): Directory (b)

     ```
     ERROR(S) FOUND IN MAT=5349, MF= 3, MT=  4
         SECTION  3/  4 NOT IN DIRECTORY             RECORD NUMBER     264
     ```

  6. Missing a section in directory so your directory is messed up. This error will break everything else
     MAT=5349, MF= 3, MT= 16 (0): Directory (b)

     ```
     ERROR(S) FOUND IN MAT=5349, MF= 3, MT= 16
         SECTION  3/ 16 NOT IN DIRECTORY             RECORD NUMBER     297
     ```

  7. Missing a section in directory so your directory is messed up. This error will break everything else
     MAT=5349, MF= 3, MT= 17 (0): Directory (b)

1

```
      ERROR(S) FOUND IN MAT=5349, MF= 3, MT= 17
         SECTION  3/ 17 NOT IN DIRECTORY                    RECORD NUMBER     318
```

8. Missing a section in directory so your directory is messed up. This error will break everything else
   MAT=5349, MF= 3, MT= 22 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5349, MF= 3, MT= 22
         SECTION  3/ 22 NOT IN DIRECTORY                    RECORD NUMBER     330
```

9. Missing a section in directory so your directory is messed up. This error will break everything else
   MAT=5349, MF= 3, MT= 28 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5349, MF= 3, MT= 28
         SECTION  3/ 28 NOT IN DIRECTORY                    RECORD NUMBER     345
```

10. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5349, MF= 3, MT= 51 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5349, MF= 3, MT= 51
         SECTION  3/ 51 NOT IN DIRECTORY                    RECORD NUMBER     361
```

11. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5349, MF= 3, MT= 52 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5349, MF= 3, MT= 52
         SECTION  3/ 52 NOT IN DIRECTORY                    RECORD NUMBER     394
```

12. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5349, MF= 3, MT= 91 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5349, MF= 3, MT= 91
         SECTION  3/ 91 NOT IN DIRECTORY                    RECORD NUMBER     427
```

13. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5349, MF= 3, MT=102 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5349, MF= 3, MT=102
         SECTION  3/102 NOT IN DIRECTORY                    RECORD NUMBER     460
```

14. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5349, MF= 3, MT=103 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5349, MF= 3, MT=103
         SECTION  3/103 NOT IN DIRECTORY                    RECORD NUMBER     517
```

15. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5349, MF= 3, MT=104 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=5349, MF= 3, MT=104
       SECTION  3/104 NOT IN DIRECTORY                RECORD NUMBER     538
```

16. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5349, MF= 3, MT=105 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=5349, MF= 3, MT=105
       SECTION  3/105 NOT IN DIRECTORY                RECORD NUMBER     556
```

17. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5349, MF= 3, MT=107 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=5349, MF= 3, MT=107
       SECTION  3/107 NOT IN DIRECTORY                RECORD NUMBER     571
```

18. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5349, MF= 4, MT= 2 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=5349, MF= 4, MT=  2
       SECTION  4/  2 NOT IN DIRECTORY                RECORD NUMBER     595
```

19. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5349, MF= 4, MT= 16 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=5349, MF= 4, MT= 16
       SECTION  4/ 16 NOT IN DIRECTORY                RECORD NUMBER    1123
```

20. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5349, MF= 4, MT= 17 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=5349, MF= 4, MT= 17
       SECTION  4/ 17 NOT IN DIRECTORY                RECORD NUMBER    1154
```

21. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5349, MF= 4, MT= 22 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=5349, MF= 4, MT= 22
       SECTION  4/ 22 NOT IN DIRECTORY                RECORD NUMBER    1173
```

22. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5349, MF= 4, MT= 28 (0): Directory (b)

```
    ERROR(S) FOUND IN MAT=5349, MF= 4, MT= 28
       SECTION  4/ 28 NOT IN DIRECTORY                RECORD NUMBER    1198
```

23. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5349, MF= 4, MT= 51 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5349, MF= 4, MT= 51
        SECTION  4/ 51 NOT IN DIRECTORY            RECORD NUMBER    1225
```

24. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5349, MF= 4, MT= 52 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5349, MF= 4, MT= 52
        SECTION  4/ 52 NOT IN DIRECTORY            RECORD NUMBER    1347
```

25. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5349, MF= 4, MT= 91 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5349, MF= 4, MT= 91
        SECTION  4/ 91 NOT IN DIRECTORY            RECORD NUMBER    1464
```

26. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5349, MF= 5, MT= 16 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5349, MF= 5, MT= 16
        SECTION  5/ 16 NOT IN DIRECTORY            RECORD NUMBER    1516
```

27. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5349, MF= 5, MT= 17 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5349, MF= 5, MT= 17
        SECTION  5/ 17 NOT IN DIRECTORY            RECORD NUMBER    1646
```

28. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5349, MF= 5, MT= 22 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5349, MF= 5, MT= 22
        SECTION  5/ 22 NOT IN DIRECTORY            RECORD NUMBER    1716
```

29. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5349, MF= 5, MT= 28 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5349, MF= 5, MT= 28
        SECTION  5/ 28 NOT IN DIRECTORY            RECORD NUMBER    1809
```

30. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5349, MF= 5, MT= 91 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5349, MF= 5, MT= 91
        SECTION  5/ 91 NOT IN DIRECTORY            RECORD NUMBER    1912
```

- `fudge-4.0` Warnings:

  1. Cross section does not match sum of linked reaction cross sections
     crossSectionSum label 0: total (Error # 0): CS Sum.

```
                    WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.23%
```

- fudge-4.0 Errors:

  1. Energy range of data set does not match cross section range
     reaction label 2: n + I135_e2 / Product: n / Distribution: / angularTwoBody - XYs2d:
     (Error # 0): Domain mismatch (a)

     ```
     WARNING: Domain doesn't match the cross section domain: (876810.1 -> 20000000.0) vs (876810.0 -> 20000000.0)
     ```

  2. Energy range of data set does not match cross section range
     reaction label 3: n + I135_c / Product: n / Distribution: / uncorrelated - angular -
     XYs2d: (Error # 0): Domain mismatch (a)

     ```
     WARNING: Domain doesn't match the cross section domain: (876810.1 -> 20000000.0) vs (876810.0 -> 20000000.0)
     ```

  3. Energy range of data set does not match cross section range
     reaction label 3: n + I135_c / Product: n / uncorrelated - energy - XYs2d: (Error # 0):
     Domain mismatch (a)

     ```
     WARNING: Domain doesn't match the cross section domain: (876810.1 -> 20000000.0) vs (876810.0 -> 20000000.0)
     ```

  4. Calculated and tabulated Q values disagree.
     reaction label 4: n[multiplicity:'2'] + I134 (Error # 0): Q mismatch

     ```
     WARNING: Calculated and tabulated Q-values disagree: -8827676.413589478 eV vs -7.9026e6 eV!
     ```

  5. Energy range of data set does not match cross section range
     reaction label 4: n[multiplicity:'2'] + I134 / Product: n / Distribution: / uncorrelated -
     angular - XYs2d: (Error # 0): Domain mismatch (a)

     ```
     WARNING: Domain doesn't match the cross section domain: (7961701.0 -> 20000000.0) vs (7961700.0 -> 20000000.0)
     ```

  6. Energy range of data set does not match cross section range
     reaction label 4: n[multiplicity:'2'] + I134 / Product: n / uncorrelated - energy - XYs2d:
     (Error # 0): Domain mismatch (a)

     ```
     WARNING: Domain doesn't match the cross section domain: (7961701.0 -> 20000000.0) vs (7961700.0 -> 20000000.0)
     ```

  7. Calculated and tabulated Q values disagree.
     reaction label 5: n[multiplicity:'3'] + I133 (Error # 0): Q mismatch

     ```
     WARNING: Calculated and tabulated Q-values disagree: -15084884.96772766 eV vs -1.4075e7 eV!
     ```

  8. Calculated and tabulated Q values disagree.
     reaction label 6: n + H1 + Te134 (Error # 0): Q mismatch

     ```
     WARNING: Calculated and tabulated Q-values disagree: -9558329.473526001 eV vs -8.6795e6 eV!
     ```

  9. Energy range of data set does not match cross section range
     reaction label 6: n + H1 + Te134 / Product: n / Distribution: / uncorrelated - angular
     - XYs2d: (Error # 0): Domain mismatch (a)

     ```
     WARNING: Domain doesn't match the cross section domain: (8744401.0 -> 20000000.0) vs (8744400.0 -> 20000000.0)
     ```

10. Energy range of data set does not match cross section range
reaction label 6: n + H1 + Te134 / Product: n / uncorrelated - energy - XYs2d: (Error # 0): Domain mismatch (a)

```
WARNING: Domain doesn't match the cross section domain: (8744401.0 -> 20000000.0) vs (8744400.0 -> 20000000.0)
```

11. Calculated and tabulated Q values disagree.
reaction label 7: I136 + gamma (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: 2741762.339797974 eV vs 3.8003e6 eV!
```

12. Calculated and tabulated Q values disagree.
reaction label 8: n + He4 + Sb131 (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -5265781.420974731 eV vs -4.2263e6 eV!
```

13. Calculated and tabulated Q values disagree.
reaction label 9: H1 + Te135_s (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -6218866.736114502 eV vs -5.1689e6 eV!
```

14. Calculated and tabulated Q values disagree.
reaction label 10: H2 + Te134_s (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -7333763.372589111 eV vs -6.455e6 eV!
```

15. Calculated and tabulated Q values disagree.
reaction label 11: H3 + Te133_s (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -8762739.346099854 eV vs -7.7297e6 eV!
```

16. Calculated and tabulated Q values disagree.
reaction label 12: He4 + Sb132_s (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: 491126.3379821777 eV vs 1.5553e6 eV!
```

- `njoy2012` Warnings:

1. Evaluation has no resonance parameters given
unresr...calculation of unresolved resonance cross sections (0): No RR

```
---message from unresr---mat 5349 has no resonance parameters
                        copy as is to nout
```

2. Evaluation has no resonance parameters given
purr...probabalistic unresolved calculation (0): No RR

```
---message from purr---mat 5349 has no resonance parameters
                       copy as is to nout
```

3. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
groupr...compute self-shielded group-averaged cross-sections (0): GROUPR/conver (0)

```
     ---message from conver---cannot do complete particle production for mt= 16
                          only mf4/mf5 provided
```

4. With the advent of the ENDF-6 format, it is possible to make evaluations that fully
   describe all the products of a nuclear reaction. Some carry-over evaluations from earlier
   ENDF/B versions also have this capability, but many do not. This message is intended
   to goad evaluators to improve things!
   groupr...compute self-shielded group-averaged cross-sections (1): GROUPR/conver (0)

```
     ---message from conver---cannot do complete particle production for mt= 17
                          only mf4/mf5 provided
```

5. With the advent of the ENDF-6 format, it is possible to make evaluations that fully
   describe all the products of a nuclear reaction. Some carry-over evaluations from earlier
   ENDF/B versions also have this capability, but many do not. This message is intended
   to goad evaluators to improve things!
   groupr...compute self-shielded group-averaged cross-sections (2): GROUPR/conver (0)

```
     ---message from conver---cannot do complete particle production for mt= 22
                          only mf4/mf5 provided
```

6. With the advent of the ENDF-6 format, it is possible to make evaluations that fully
   describe all the products of a nuclear reaction. Some carry-over evaluations from earlier
   ENDF/B versions also have this capability, but many do not. This message is intended
   to goad evaluators to improve things!
   groupr...compute self-shielded group-averaged cross-sections (3): GROUPR/conver (0)

```
     ---message from conver---cannot do complete particle production for mt= 28
                          only mf4/mf5 provided
```

7. With the advent of the ENDF-6 format, it is possible to make evaluations that fully
   describe all the products of a nuclear reaction. Some carry-over evaluations from earlier
   ENDF/B versions also have this capability, but many do not. This message is intended
   to goad evaluators to improve things!
   groupr...compute self-shielded group-averaged cross-sections (4): GROUPR/conver (0)

```
     ---message from conver---cannot do complete particle production for mt= 91
                          only mf4/mf5 provided
```